

DaimlerChrysler AG

Patent claims

- 5 1. A control system (1) for a vehicle,
- having an electronically controllable drive train,
- having a coordination level (4) which can be
assigned to a system control device (6) and in
which set point values (SW) are generated from
10 state variables (ZG) of the vehicle and from
driver's wishes (FW) and actuation signals (AS)
for actuating actuators (A) are generated
therefrom,
- having an execution level (AE) which is
15 subordinate to the coordination level (K) and has
actuators (A) for executing the actuation signals
(AS),
characterized
- in that an axle electronic module (2) is provided
20 for activating at least one brake actuator (AA₁)
assigned to the vehicle axle (3), and is arranged
in the region of the vehicle axle (3),
- in that the axle electronic module (2) is
connected to the coordination level (K) in order
25 to transmit set point values (SW), and is designed
to determine actuation signals (AS) from the set
point values (SW) in order to control the
respective axle actuator (AA),
- in that the axle electronic module (2) is
30 connected to a controllable differential lock (DS)
in order to transmit the actuation signals (AS).
2. The control system as claimed in claim 1,
characterized in that the control system (1) has an
35 axle control device (5) which is assigned to the
execution level (AE), is arranged in the region of the
vehicle axle (3) and contains the axle electronic
module (2).

3. The control system as claimed in claim 1 or 2, characterized in that the axle electronic module (2) has sensors for sensing the axle torques, and an
5 actuator is provided for locking the differential, said actuator activating the differential lock (DS) when the axle torques reach a predetermined value.

4. The control system as claimed in one of claims 1
10 to 3, characterized in that the axle electronic module (2) comprises electronics and/or software and/or local control circuits for at least one of the following functions:

- braking,
- 15 - locking of a differential,
- pitching and/or rolling,
- regulating a ride level.

5. The control system as claimed in claim 4,
20 characterized in that the electronics and/or the software and/or the local control circuit for the brake function regulates at least one element from the following list:

- brake pressure,
- 25 - local ABS,
- ABS signal acquisition and processing,
- active wear adjustment for a vehicle brake,
- sensing of brake lining wear.

30 6. The control system as claimed in claim 4 or 5, characterized in that the differential lock (DS) is designed as an ESP-compatible differential lock.

7. The control system as claimed in one of claims 4
35 to 6, characterized in that the electronics and/or the software and/or the local control circuit has a local algorithm for the pitching and/or the rolling function.

8. The control system as claimed in one of claims 4 to 7, characterized in that the axle electronic module (2) comprises electronics and/or software and/or local control circuits for at least one element from the following group:

- tire management system (calculation of a coefficient of friction),
- lubricant management system for axle differential,
- tire pressure sensor,
- 10 - axle-related actuators.